



GUIDANCE ON DEMAND RESPONSE

Emergency vs. Economic Demand Response

Air Resources Division/Permitting and Environmental Health Bureau



Background:

Demand response is generally used to refer to mechanisms used by the regional transmission authority (i.e., the electric grid operator) to encourage consumers, whether residential, commercial, institutional, or industrial, to trim their electricity usage at specific times of the day (such as during peak demand hours), during high electricity prices, or during emergencies (such as preventing or responding to a blackout condition). Demand response programs typically offer incentives to businesses that participate by temporarily reducing their electricity use when demand could outpace supply.

Demand response can be further divided into two categories:

- Emergency demand response (EDR); or
- Economic demand response (Peak Shaving).

Emergency Demand Response:

Emergency demand response programs are not called upon on a frequent basis. Instead, they are typically dispatched once a specifically defined event takes place. In NH, EDR is declared by ISO New England (ISO-NE, the regional transmission authority) to avoid involuntary service interruptions during times of supply scarcity when the reliability of the grid is threatened. Specifically, ISO-NE directs the implementation of EDR procedures when grid conditions trigger their Operating Procedure 4 (OP4), Action 6. This typically means that there is a deviation of line voltage or frequency of 5 percent or greater below standard voltage or frequency on the grid and the possibility of a blackout is imminent.

Please note that electric utility companies may have their own peak shaving or demand response programs, but they typically do not qualify as EDR.

Economic Demand Response:

Economic demand response or peak shaving is employed by utilities to allow electricity customers to curtail their consumption of utility-generated electricity, often by replacing it with customer-generated electricity, to save money on their electric bill. Participants in economic demand response programs are generally called upon to reduce their electric consumption voluntarily, well in advance of when voltage or frequency reductions or EDR are called upon by the regional transmission authority.

Summary:

In both cases, businesses will typically use generators to supply power at their facilities. An electric generator is a device that converts mechanical energy obtained from an external source into electrical energy as the output. An engine is typically the source of the input mechanical energy to the generator.

If your engine is under a contract in which it is required to operate for any situation outside of an EDR, your engine would no longer be considered an “emergency engine” under the state or federal definition and would have to meet more stringent requirements for non-emergency engines.